

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Plasma physics		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code			
ECTS Credits			
SWL (hr/sem)			
Module Level	4	Semester of Delivery	
Administering Department		College	College of Science
Module Leader	Dr.Rudainah Ali Lateef	e-mail	Rudayna2000@yahoo.com
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	//2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1- Introducing students to the concept of plasma energy and its importance in human life 2 - Introduce the student to the importance of plasma in terms of economic importance 3- Introduce students to sustainable plasma sources and how to exploit them 4- Introducing students to the uses of plasma in the medical, industrial and agricultural fields
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 1. Definition of the plasma 2. Definition of the types of plasma and its properties 3. Students' knowledge of the methods to generate plasma 4. Identifying the applications of plasma 5. study plasma medical 6. Definition conditions of plasma
Indicative Contents المحتويات الإرشادية	Indicative content includes the following - Definition of the plasma. [5 hrs] - Discussion of the types of plasma and its properties. [10 hrs] - the methods to generate plasma. [10 hrs] - Identify the properties of stars and the most important factors associated with the luminosity of stars . [10 hrs]. - Study of the applications of plasma. [5 hrs]. - . Definition conditions of plasma. [5 hrs].

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted is to present this unit in theoretical lectures from the professor of the scientific subject, while encouraging students to participate in clarifying the topics through discussion among students with the use of means of clarification, including posters in addition to scientific films, with a description of recent reports of scientists in this field.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects	1	10% (10)	Continuous	All
	Report	2	10% (10)	6 and 11	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	9	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Quasineutral- Plasma Definition- Criteria For Plasma
Week 2	Definition of Plasma Quasi-neutrality- Collective behavior
Week 3	Concept of Temperature
Week 4	Debye Shielding -Plasma frequency, Plasma period
Week 5	The Plasma Parameter
Week 6	Criteria for Plasmas- Applications of Plasma Physics
Week 7	Single-Particle Motions
Week 8	Uniform E and B
Week 9	Fields $E=0$, Cyclotron frequency, Larmor radius Finite E (derivation), Gravitational field

Week 10	Plasma Fluids
Week 11	Relation of Plasma Physics to Ordinary Electromagnetics Maxwell's equations
Week 12	Electron Plasma Waves (derivation)
Week 13	Debye Shielding
Week 14	Plasma Frequency
Week 15	Plasma Pressure
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	(1984). <i>Plasma Physics and Controlled Fusion</i> . Plenum Press. ISBN 978-0-306-41332-2. Archived from the original on 15 January 2018	Yes
Recommended Texts		yes
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group	A - Excellent	امتياز	90 - 100	Outstanding Performance

(50 - 100)	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
<p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				